A word or two from the chair

Paul Schnetter

Hold the presses!! I got a bit behind on my monthly chores here. Usually, although I might be streatching things a bit. I have been a bit more timely with my monthly articles. However, this month I just didn't feel the creative urges until well past the deadline. So here is a rather half hearted chairmans' rantings for the month of August. I mailed off the request for a meeting place at West High School for the up comming year. I will have an answer hopefully by the next meeting. Our local disk supplier has delivered another load for the ST and 8-bit disk of the month. So, bring in those $$ for the next months disk of suprizes!! I typed my fingers off for all you 8-bit owners, on the MAAUG bbs and in this issue are a Fractal plotting and viewing program written in turbo basic. You can type it in yourself or download it from the club bbs. Thanks to the SLCC journal and the San Leandro Atari users group for the copy. Well, as I said before, this column is a bit late...soo......hope to see ya at the next meeting!!

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New Members!

Bill Faulkner
John Beetem
Charles Rabideaux
Harland Amborn
Carle Hoel
Richard Maves
Kamal Kawar
Todd Butson
Dan Grim
Susan Gilbert
WELCOME TO MAAUG!

Editors Desktop

I hope you folks took notice of this skimpy issue!! the newsletter really needs contributers, software reviews, letters of praise, criticism, articles of your pet project (whether hardware or software), what YOU think should be done in MAAUG, ANYTHING is welcome!!
Yes, Even the editor is getting burned out by lack of contributers... pretyy soon, there will be almost nothing to write about... then everyboy will think its not worth going to the meeting...then the club falls apart... think about it... is this apathy worth it??

BE THERE

The August Meeting will be held on Tuesday, August 11th, at the Lake Edge United Church of Christ, 4200 Buckeye Road, at 7PM

A Look At Printers...

By Craig Radi

There has been some discussion on the MAAUG board about printers. People want to know which one to get and what are some of the features. I hope this article will give you more insight to the question. Two of the most popular printers on the market today are DOT MATRIX, and DAISY WHEEL type printers. This article will deal with these types. Dot-matrix printers use pins or wires as tiny hammers to strike an inked ribbon against paper and form each letter out of a pattern (matrix) of dots. They have three main advantages that is they are fast, cost less than most daisy wheel printers, and can print graphics and custom characters. Most of the new dot-matrix printers can handle a wide choice of fonts with several types already built in to most of them. You may have the choice of Bold, Subscript, Superscript, italics, Condensed, Double strike, Expanded, variable pitch (the number of characters per inch), and a host of other features including near letter quality type of print. Most printers have both Friction and Tractor feeds for your printing needs. Friction feed is the familiar typewriter method, the paper is held by rollers pressed tightly against the platen. Tractor feed allows you to use fan-fold type of paper for continuous feeds and are adjustable to let you also print labels. Some printers have buffers to store text before you print your files. They vary in size of memory but allow you to dump your file to a buffer thus freeing up your RAM space in your computer for other things. DIP switches are found on most printers. Some allow you to change transfer settings such as pitch, spacing, etc. And also to load in special fonts for a more unique print-out. The more DIP switches, the more flexibility you will have.

Daisy Wheel printers use a flat disk with over 100 spokes. Each spoke contains a character, which is hammered against a ribbon to create a one-piece image on paper. If you want to use different fonts, you must chage the wheels before printing. Daisy wheel printers offer true letter quality print and is the choice for most business offices today. But with some of the new dot-matrix printers out today and their near letter quality print, it is getting to close to daisy wheel quality. Daisy wheel printing is generally slower than dot-matrix types. they average about 20 to 80 characters per inch verses 100 to 200 cps. for dot-matrix types. Because of the limit to wheels, you can not do graphics on daisy wheel printers, though I have seen some nice ASCII art work.

So you see there is a lot of choices when it comes to buying a printer. The question to really ask yourself is what do I want to do with my printer? If you are looking for a priner to do all of your program listings, text file printing, graphics or pictures, special fonts, etc. then a dot-matrix is the one for you. But if you need real letter quality print, then the daisy wheel is the only way to go. I currently own a Gemi 10X dot-matr pinter that I bought for $148.00. It uses the old Underwood spool type of ribbons and those are real cheap to replace, around $2 ∞ per reel. Outside of a lit head cleaning, I have had no problem in the two years I have owned it, and it is a real work horse of a machine. I use a Graphix AT interface for my 800XL and it is a smart interface that has its own built in ROM for special printing features, so you don't have to use your printers DIP switches, just the ones on the interface. Or combine the both for the ultimate in flexibility.

If you have anymore questions on this subject, I would like to hear from you. Just drop a note to our editor, or leave a message to me on the MAAUG board. Happy Computing!

Turbo Fractals

By Jerry Telfer, Reprinted from the July 1987 San Leandro Computer Users Group.
Turbo Basic Required.

This is an Example of Turbo Basic (for the Atari 8 Bit machines) programming. Study the following isting and incorporate its techniques in your own Turbo Basic Efforts.

```
1 EXEC SETUP:EXEC LOAD_ML:GO# MENU
2 --------------------------------
3 # CALC_PIXELS
4 SV=0:XP=0:X=X5:GOTO 6
5 X=X+XT
6 XP=XP+1:IF XP>=A1 THEN SV=1:GO# PICD
ONE
7 YP=A4+1:Y=Y5
8 Y=Y+YT
9 YP=YP-1:IF YP<1 THEN 5
10 AZ=0:BZ=0:AC=X:BC=Y:C=0:S=0
11 --------------------------------
12 DO
13    IF C>CT OR S>SL THEN EXIT
14    AT=AZ*AZ-BZ*BZ:BT=AZ*BZ*2:AZ=AT+A
C:BZ=BT+BC
15    IF PEEK(764)<255 OR PEEK(632)<>15
 THEN EXEC CHECK_KEY
16    TS=AZ*AZ+BZ*BZ:S=TS:C=C+1
17 LOOP
18 --------------------------------
19 POKE 77,0:IF C>CT THEN CL=0:GO# CON
TINUE
20 IF MODE=15 THEN EXEC COLOR_15:GO# C
ONTINUE
21 A=C MOD 2:IF A>0:CL=1:ELSE :CL=0:EN
DIF
22 # CONTINUE
23 COLOR CL:PLOT XP,YP
24 GOTO 8
25 --------------------------------
26 PROC COLOR_15
27    IF C<10:PP=C:ELSE :PP=C MOD 10:EN
DIF
28    IF PP=1 OR PP=4 OR PP=7 THEN CL=1
29    IF PP=2 OR PP=5 OR PP=8 THEN CL=2
30    IF PP=3 OR PP=6 OR PP=9 THEN CL=3
31 ENDPROC
32 --------------------------------
33 # ZOOM
34 X0=A2:Y0=A3:COLOR 1:KEY=255:POKE 76
4,255
35 PLOT X0,Y0:H=PEEK(632)
36 IF H<>15 THEN EXEC MOVE_DOT
37 IF X0>A1 THEN X0=X0-1
38 IF X0<0 THEN X0=X0+1
39 IF Y0>A4 THEN Y0=Y0-1
40 IF Y0<0 THEN Y0=Y0+1
41 GO# ZOOM_NUMBER
42 --------------------------------
43 PROC MOVE_DOT
44    PAUSE 2
45    XX=X0:YY=Y0
46    COLOR 0:PLOT XX,YY:COLOR 1
47    IF H=6 OR H=10 OR H=14 THEN Y0=Y0
-1
48    IF H=5 OR H=13 OR H=9 THEN Y0=Y0+
1
49    IF H=6 OR H=7 OR H=5 THEN X0=X0+1
50    IF H=9 OR H=10 OR H=11 THEN X0=X0
-1
51 ENDPROC
52 --------------------------------
53 # ZOOM_NUMBER
54 IF KEY=255 THEN GO# ZOOM_DONE
55 IF KEY=31 THEN N=1
56 IF KEY=30 THEN N=1.27
57 IF KEY=26 THEN N=1.9
58 IF KEY=24 THEN N=2.8
59 IF KEY=29 THEN N=4
60 IF KEY=27 THEN N=6
61 IF KEY=51 THEN N=7.5
62 IF KEY=53 THEN N=10
63 IF KEY=48 THEN N=15
64 EXEC BELL
65 POKE 764,255
66 --------------------------------
67 # ZOOM_SQUARE
68 IF N=0 THEN GO# ZOOM_DONE
69 P1=X0-A2/N:P2=X0+A2/N:P3=Y0-A3/N:P4
=Y0+A3/N
70 IF P2>A1 AND P3<0 THEN PLOT P1,0:DR
AWTO P1,P4:DRAWTO A1,P4:GO# ZOOM_DONE
71 IF P1<0 AND P3<0 THEN PLOT P2,0:DRA
WTO P2,P4:DRAWTO 0,P4:GO# ZOOM_DONE
72 IF P1<0 AND P4>A4 THEN PLOT 0,P3:DR
AWTO P2,P3:DRAWTO P2,A4:GO# ZOOM_DONE
73 IF P2>A1 AND P4>A4 THEN PLOT A1,P3:
DRAWTO P1,P3:DRAWTO P1,A4:GO# ZOOM_DOM
E
74 IF P1<0 THEN PLOT 0,P3:DRAWTO P2,P3
:DRAWTO P2,P4:DRAWTO 0,P4:GO# ZOOM_DON
E
75 IF P3<0 THEN PLOT P1,0:DRAWTO P1,P4
:DRAWTO P2,P4:DRAWTO P2,0:GO# ZOOM_DON
E
76 IF P4>A4 THEN PLOT P1,A4:DRAWTO P1,
P3:DRAWTO P2,P3:DRAWTO P2,A4:GO# ZOOM_
DONE
77 IF P2>A1 THEN PLOT A1,P3:DRAWTO P1,
P3:DRAWTO P1,P4:DRAWTO A1,P4:GO# ZOOM_
DONE
78 PLOT P1,P3:DRAWTO P2,P3:DRAWTO P2,P
4:DRAWTO P1,P4:DRAWTO P1,P3
79 --------------------------------
80 # ZOOM_DONE
81 KEY=PEEK(764)
82 IF KEY=28 THEN GO# MENU
83 IF PEEK(53279)=6 THEN EXEC BELL:GO#
 NEW_NAME
84 IF KEY=10 THEN POKE 764,255:EXEC BE
LL:EXEC SET_PRINT:EXEC DUMP:EXEC LOAD_
ML:EXEC BELL
85 IF KEY=62 THEN POKE 764,255:EXEC BE
LL:EXEC SAVE_PIC:EXEC BELL
86 GOTO 35
87 --------------------------------
88 # NEW_NAME
89 TRAP #NEW_NAME:GRAPHICS 0:SETCOLOR
2,0,2
90 ? :? "Do you want to change the fil
ename      (1=Yes 0=No)":POKE 752,2:INP
UT ASK
91 IF ASK>1 THEN GO# NEW_NAME
92 IF ASK=0 THEN GO# RESOLUTION
93 IF ASK=1
94    CLS :? :? "Current Filename is ->
";A$;"<-"
95    ? :? :? "        Fractal Direct
ory "
96    EXEC DIRECTORY
97    ? :? "Filename (up to 8 character
s max.,         '0' for another d
irectory)"
98    POKE 752,2:INPUT A1$
99    IF A1$="0" THEN 94
100   A$=A1$:EXEC FIX_NAME
101 ENDIF
102 --------------------------------
103 # RESOLUTION
104 TRAP #RESOLUTION:GRAPHICS 0:SETCOL
OR 2,0,2
105 ? :? "Input a resolution number fr
om       10-1000"
106 ? "The previous Fractal was plotte
d with resolution   ->";CT;"<-"
107 ? :? "What number would you like":
POKE 752,2:INPUT CC
108 IF CC<2 OR CC>1000 THEN GO# RESOLU
TION
109 CT=CC
110 --------------------------------
111 # ZOOM_CALC
112 X5=X5+((P1+P2)/2)*XT
113 RRANGE=(P2-P1)*XT
114 X5=X5-(RRANGE/2)
115 XE=X5+RRANGE
116 XT=(XE-X5)/A1
117 Y5=Y5+((191-((P3+P4)/2))*YT)
118 Y5=Y5-(RRANGE*0.77)/2
119 YE=Y5+RRANGE*0.77
120 YT=(YE-Y5)/A4
121 GRAPHICS MODE+16:EXEC SET_COLORS:G
O# CALC_PIXELS
122 --------------------------------
123 # MENU
124 GRAPHICS 0:SETCOLOR 2,0,2:?
125 ? "        WELCOME TO FRACTALAND"
126 ? :? :? " Would you like to:":? :?
"   (1) View Frac8 "
127 ? :? "   (2) View Frac15 ":PRINT :
PRINT "   (3) View your own saved PIC"
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```
128 ? :? "    (4) Instructions"
129 TRAP #MENU:? :? " Choose (1,2,3 or
 4) ":POKE 752,2:INPUT CH
130 --------------------------------
131 IF CH<1 OR CH>4 THEN MENU
132 IF CH=1 THEN A$="FRAC8"
133 IF CH=2 THEN A$="FRAC15"
134 IF CH=1 OR CH=2 THEN EXEC FIX_NAME
:EXEC LOAD_PIC:GO# CONTINUE
135 IF CH=3 THEN EXEC DIRECTORY
136 IF CH=4 THEN GO# INFO
137 --------------------------------
138 # WHICH_PIC
139 TRAP #MENU:? :? "Which Pic to load
?":? "('0'for another directory,
     RETURN for menu)"
140 POKE 752,2:INPUT A$
141 IF A$(1,1)="0" THEN A$(1,1)=" ":EX
EC DIRECTORY:GO# WHICH_PIC
142 EXEC FIX_NAME:EXEC LOAD_PIC:GO# CO
NTINUE
143 --------------------------------
144 PROC DIRECTORY
145 ? :CLOSE #1:OPEN #1,6,0,"D:*.PIC
"
146 FOR J=1 TO 10
147 FOR I=0 TO 1
148 INPUT #1,B$
149 IF LEN(B$)=16 THEN 153
150 ? B$(3,10);" ";
151 NEXT I:?
152 NEXT J
153 CLOSE #1:PRINT B$
154 ENDPROC
155 --------------------------------
156 PROC FIX_NAME
157 FI$="D:":FI$(3)=A$
158 FI$(LEN(FI$)+1)=".PIC"
159 ENDPROC
160 --------------------------------
161 PROC LOAD_PIC
162 EXEC LOAD_DATA
163 TRAP #MENU:CLOSE #1:OPEN #1,4,0,
FI$
164 GRAPHICS MODE+16
165 POKE 559,0:CO=PEEK(88)+PEEK(89)*
256
166 Z=USR(ML,7,CO,7680)
167 CLOSE #1
168 EXEC SET_COLORS
169 POKE 559,P5:IF SV=1 THEN GO# PIC
DONE
170 ENDPROC
171 --------------------------------
172 PROC SAVE_PIC
173 EXEC SAVE_DATA
174 TRAP #MENU:CLOSE #1:OPEN #1,8,0,
FI$
175 CO=PEEK(88)+PEEK(89)*256
176 Z=USR(ML,11,CO,7680)
177 CLOSE #1
178 ENDPROC
179 --------------------------------
180 PROC SAVE_DATA
181 FG$=FI$:FG$(LEN(FG$)-3)=".DAT"
182 TRAP #MENU:CLOSE #1:OPEN #1,8,0,
FG$
183 ? #1,X:? #1,XP:? #1,XS:? #1,XE
184 ? #1,XT
185 ? #1,Y:? #1,YP:? #1,YS:? #1,YE
186 ? #1,YT
187 ? #1,AZ:? #1,BZ:? #1,AC:? #1,BC
188 ? #1,C:? #1,CT:? #1,SV:? #1,MODE
189 ? #1,PEEK(708):? #1,PEEK(709):?
#1,PEEK(710):? #1,PEEK(712):? #1,SL:?
#1,CL
190 CLOSE #1
191 ENDPROC
192 --------------------------------
193 PROC LOAD_DATA
194 FG$=FI$:FG$(LEN(FG$)-3)=".DAT"
195 TRAP 202:CLOSE #1:OPEN #1,4,0,FG
$
196 INPUT #1,X:INPUT #1,XP:INPUT #1,
XS:INPUT #1,XE:INPUT #1,XT
197 INPUT #1,Y:INPUT #1,YP:INPUT #1,
YS:INPUT #1,YE:INPUT #1,YT
198 INPUT #1,AZ:INPUT #1,BZ:INPUT #1
,AC:INPUT #1,BC
199 INPUT #1,C:INPUT #1,CT:INPUT #1,
SV:INPUT #1,MODE
200 INPUT #1,C1:INPUT #1,C2:INPUT #1
,C3:INPUT #1,C4:INPUT #1,SL:INPUT #1,C
L
201 CLOSE #1
202 IF MODE=8 THEN A1=319:A2=159:A3=
95:A4=191
203 IF MODE=15 THEN A1=159:A2=79:A3=
95:A4=191
204 ENDPROC
205 --------------------------------
206 PROC COLORSWAP
207 IF ST=14 THEN C1=C1+2:POKE 708,C
1:IF C1>240 THEN C1=-2
208 IF ST=7 THEN C2=C2+2:POKE 709,C2
:IF C2>240 THEN C2=-2
209 IF ST=13 THEN C3=C3+2:POKE 710,C
3:IF C3>240 THEN C3=-2
210 IF ST=11 THEN C4=C4+2:POKE 712,C
4:IF C4>240 THEN C4=-2
211 PAUSE 10
212 ENDPROC
213 --------------------------------
214 PROC SETUP
215 DIM A$(15),B$(20),A1$(15),FI$(15
),FG$(15),AA$(193)
216 SV=0:P5=PEEK(559):POKE 65,0
217 ENDPROC
218 --------------------------------
219 PROC LOAD_ML
220 ML=ADR("hhh...[machine code string]...")
221 ENDPROC
222 --------------------------------
223 PROC BELL
224 SOUND 0,210,10,4:PAUSE 15:SOUND
225 ENDPROC
226 --------------------------------
227 # PICDONE
228 KEY=PEEK(764)
229 IF KEY=28 THEN GO# MENU
230 IF FLAG=1 THEN POKE 559,P5:FLAG=0
231 ST=PEEK(632):IF ST<>15 THEN EXEC C
OLORSWAP
232 IF KEY=23 THEN EXEC BELL:GO# ZOOM
233 IF KEY=10 THEN POKE 764,255:EXEC B
ELL:EXEC SET_PRINT:EXEC DUMP:EXEC LOAD
_ML:EXEC BELL
234 IF KEY=62 THEN POKE 764,255:EXEC B
ELL:EXEC SAVE_PIC:EXEC BELL
235 POKE 77,0:GO# PICDONE

236 --------------------------------
237 PROC SET_COLORS
238 POKE 708,C1:POKE 709,C2:POKE 710
,C3:POKE 712,C4
239 ENDPROC
240 --------------------------------
241 PROC CHECK_KEY
242 KEY=PEEK(764)
243 ST=PEEK(632)
244 IF ST<>15 THEN EXEC COLORSWAP
245 IF (KEY<>33 AND KEY<255 OR ST<>1
5) AND FLAG=1 THEN POKE 559,P5:FLAG=0
246 IF KEY=28 THEN GO# MENU
247 IF KEY=33 AND FLAG=0 THEN POKE 5
59,0:FLAG=1:POKE 764,255:GOTO 249
248 IF KEY=33 AND FLAG=1 THEN POKE 5
59,P5:FLAG=0:POKE 764,255
249 IF KEY=23 THEN EXEC BELL:GO# ZOO
M
250 IF KEY=10 THEN EXEC BELL:EXEC SE
T_PRINT:EXEC DUMP:EXEC LOAD_ML:EXEC BE
LL
251 IF KEY=62 THEN EXEC BELL:EXEC SA
VE_PIC:EXEC BELL
252 POKE 764,255:ENDPROC
253 --------------------------------
254 PROC DUMP
255 TRAP #MENU:CLOSE #5:OPEN #5,8,0,
"P:"
256 ? #5;CHR$(27);CHR$(65);CHR$(8):F
OR XXX=DM TO DM+39
257 AA$=CHR$(0):AA$(192)=AA$:AA$(2
)=AA$
258 W=USR(1536,XXX,ADR(AA$)):LPRIN
T CHR$(27);CHR$(75);CHR$(192);CHR$(0);
AA$:NEXT XXX
259 ENDPROC
260 --------------------------------
261 PROC SET_PRINT
262 RESTORE 266:FOR T=1 TO 61:READ Q
:POKE 1545+T,Q
263 NEXT T:DM=PEEK(88)+PEEK(89)*256:
DM=DM+40*191:T=0
264 ENDPROC
265 --------------------------------
266 DATA 104,104,141,31,6,104,141,30,6
,104,141,37,6,104,141,36,6,160,193,173
,255,255,136,240,35,141,255,255,238
267 DATA 36,6,240,21,173,30,6,56,233,4
0,141,30,6,144,4,24,76,29,6,206,31,6,7
6,29,6,238,37,6,76,43,6,96
268 --------------------------------
269 # INFO
270 POKE 752,2:? "R":? :? :?
271 ? "These intriguing pictures are p
lotted one pixel at a time, and are ba
sed on Fractal formulas presented ";
272 ? "in        Scientific American
mag., and the book,'Fractal Geometry O
f Nature', by      Benoit Mandelbrot."
273 ? "You need no knowledge of the fo
rmulas to generate your own, unique Fr
actal designs.  This program ";
274 ? "takes care of  all the work for
you."
275 ? "Any part of a pic can be magnif
ied    indefinitely, to show more comp
lex,   beautiful fractal forms."
276 ? "You can start zooming with FRAC
8- a   2-color mode offering the highe
st   resolution, or with FRAC15- a"
277 ? "4-color, medium res. fractal."
278 POKE 752,2:GOSUB 347:? "R":? :? :?
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```
279 ? "ʀ":? :? " Along with this progr
am, you            need the following fi
les on disk-"
280 ? :? "FRAC8.PIC":? "FRAC8.DAT":? "
FRAC15.PIC":? "FRAC15.DAT"
281 ? :? "   The menu presented to you
 at the   start gives you 4 choices. "


282 ? "The first  two let you view the
 pictures on disk,FRAC8 and FRAC15. Th
ey were plotted ingraphic modes ";
283 ? "8 and 15. The third    choice
will give you a disk directory of pict
ures that the ";
284 ? "program saves foryou. ";
285 ? "The fourth gives you these
 instructions."
286 POKE 752,2:GOSUB 347:? "ʀ":? :? :?

287 ? "Once you pick a picture to load
, it   will then be displayed. ANYTIME
 a ";
288 ? "   Picture is on screen, you c
an ";
289 ? "change  the colors by moving yo
ur joystick.  The color on screen wil
l cycle from   dark";
290 ? " to light and ";
291 ? "then jump to the   next color.
 The cycle runs through 15 colors, wit
h 7 brightnesses each."
292 ? "Each stick position changes the
 color of different parts of the pictu
re, so experiment to get the ";
293 ? "feel of it."
294 POKE 752,2:GOSUB 347:? "ʀ":? :? :?

295 ? "To magnify a part of the pictur
e for  more detail, press the 'Z' for
zoom   key while the pic is ";
296 ? "displayed.  A dotwill appear at
 the center of the   picture that y
ou move about with your joystick. ";
297 ? "Place the dot at the center of
the next pic you would like plotted.(i
t may be hard to see in mode 8)."
298 GOSUB 347:? "ʀ":? :? :?
299 ? "Next, push a key from 1-9, with
1    being the same size. ";
300 ? " A different sizesquare will be
 drawn depending on   which number y
ou select.";
301 ? " If you're notsatisfied with th
e size of the square or the placement
of it, just move the dot again";
302 ? " with the joystick, and/or,  se
lect another number. Selecting '1' wi
ll allow you to shift the ";
303 ? "picture   for better positionin
g, without      zooming."
304 ? "Once your satisfied with the po
sition and size of the square, push ST
ART to begin the next picture."
305 GOSUB 347:? "ʀ":? :? :?
306 ? "You'll be asked for a new filen
ame, ifyou wish to change it."
307 ? "A resolution number from 10-100
0 is   also asked for. Low numbers are
 good  for quick scans of interesting"
308 ? "areas, while high numbers resul
t in   longer, more detailed plots. I
suggestaround 250 for a good ";
309 ? "compromize        between speed a
nd resolution."
310 GOSUB 347:? "ʀ":? :? :?
311 ? "  To save a picture in progress
, just push '5', and the program will
save itto drive #1 with the ";
312 ? "filename you gaveit earlier. Th
ere must be 66 sectors  free space on
the disk before saving.";
313 ? " You can then recall it later b
y using choice #3 at the beginning men
u.  It   will";
314 ? " automatically continue plottin
g  where it left off. This is convenia
nt if you don't want to tie up your";
315 ? "   computer for the long tim
e required tocomplete a full picture.
Remember, youcan magnify";
316 ? " a part of the ";
317 ? "picture evenif it's not finishe
d. Just push 'Z' tostart the magnifica
tion process      described before."
318 GOSUB 347:? "ʀ":? :? :?
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```
319 ? " After you push '5'ave, START,
'Z'oom or 'P'rint, a tone will sound.
You mayhave to wait a second ";
320 ? "until the ";
321 ? "          Program finishes the curr
ent      calculation before it tak
es action.   You need only push the "
322 ? "appropriate key once."
323 ? "By the way, Pushing 'P' will se
nd the displayed picture to an Epson/G
emini  printer."
324 GOSUB 347:? "ʀ":? :? :?
325 ? " You can return to the main men
u by   hitting the ESC key at any time
 .";
326 ? " Also, when asked for names for
your         Pictures, don't add any ex
tenders, theprogram takes ";
327 ? "care of that."
328 ? "The Pictures are saved in a sta
ndard  62-sector format that you can u
se withother popular paint software."
329 ? "The space bar toggles the scree
n   on/off. Plotting speed is incre
ased   30% by having the screen off."
330 ? :? :? "       Enjoy the program
!!!"
331 GOSUB 347:? "ʀ":? :? :?
332 ? "   Programmed by:"
333 ? :? "        Brian M. Hershey":?
"
334 ? "    183 Granger Rd., #3"
           Leola, PA  17540":? "
335 ? :? " Compuserve -> 72337,2013
          DELPHI     -> 25BMH"
336 ? :? :? "Feel free to modify, dist
ribute, write, call or leave E-Mail. I
f you have aninterest in Fractals,";
337 ? " I'd like to herefrom you!";
338 GOSUB 347:? "ʀ":? :?
339 ? "          -REMEMBER-":?
340 ? "   '5'   -> Saves picture to d
isk"
341 ? :? "   'Z'   -> Places dot on s
creen
g"                    to start zoomin
342 ? :? "   START  -> Starts next pic
ture                  after zooming"
343 ? :? "   'P'   -> Begins screen-d
ump to                 Epson/Gemini pr
inter"
344 ? :? "   ESC   -> Returns to main
menu"
345 ? :? "Space bar -> Turns screen of
f/on for               30% speed incre
ase"
346 GOSUB 347:GO# MENU
347 POSITION 2,22:? "PRESS ANY KEY TO
CONTINUE...."
348 IF PEEK(753)=0 THEN 348
349 PAUSE 25:POKE 764,255:RETURN
350 --------------------------------
```